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ABSTRACT

A review of the research on the response of college faculties to innovation is followed by a discussion of the technology currently available to colleges and universities in the public sector, and six working assumptions for administrators with regard to the current state of instructional technology. The paper concludes with a brief description of a major proposal developed through the combined efforts of the American Association of State Colleges and Universities (AASCU) and the National Association of State Universities and Land-Grant Colleges (NASULGC) to promote faculty acceptance and use of technology to enhance instruction. Four references are listed. (LLS)

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FACULTY RESPONSE TO THE USE OF TECHNOLOGY

by

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FACULTY RESPONSE TO THE USE OF TECHNOLOGY

Introduction

I will begin this essay with a qualification that requires expression, one which is a re-statement of the obvious - it is impossible to reference "a" faculty response to the use of technology as it is to characterize "a" faculty on almost any matter or issue you may care to mention. For example, on my own faculty, a recently retired political science professor reliably cast a single opposing vote on any occasion where unanimity prevailed oo the principle of retaining the "purity" of a persistent minority viewpoint as a benchmark characteristic of true faculty loyalty to the academy.

Of course, there are faculty responses to the use of technology for instructional purposes as you might well expect; clearly, the literature on the subject documents a range of views not unlike the response to the use of anything else perhaps the book, or the library. But keep in mind - Lineberry is quoted in Willett's Modernizing the Little Red School House as saying, "the antitechnologists of antiquity were convinced that even the book, by downgrading memory, could produce only a race of imbeciles."

And it is important when delivering a paper to such an erudite audience of experts as we have here, to say, at the outset, that the safer and more creditable reference to make about faculty response is that it is best seen by the current instructional methodologies they employ. Our planners should be pleased to know that the evidence in surveys and studies by Stern, Evans, Kozma, Cogan and others clearly warrants the convening of a National Conference on Technology and Education. But for a pitifully few college and university exceptions, the collegiate response to technology fits the discomforting view expressed by C.P.Snow almost twenty years ago (Evans):

> In a society like ours, academic patterns change more slowly than any others. In my lifetime, in England, they have crystallized rather than loosened. I used to think that it would be about as hard to charge say, the Oxford and Cambridge scholarship examinations as to conduct a major revolution. I now believe that I was over optomistic."

At the outset, let me say that my presence here today and the engagement of much time and effort on AASCU's Committee on Communications Technology are expressions of my own belief that progress is being made - however slowly - and there is reason to believe that the pace of progress will accelerate in the years ahead if the academy wills that it be given a high priority.

In the time alloted to me, I intend to touch upon a few of the available research studies which deal with faculty response to innovation; the technology currently available to colleges and universities in the public sector; a set of assumptions which to me set in place the principal guideposts for charting the course of progress; and, I shall conclude with a brief description of a major proposal to spur progress jointly sponsored by AASCU and NASULGC.

Selected Studies

Although the study is along in years (1967), the comprehensive study by Evans and Lippman reported in their book, Resistence to Innovation in Higher Education is classic and is really quite relevant and topical.

The authors examined an academic community's response to Instructional Television - using a number of variables - and obtained data on the general beliefs and the personality orientation of the faculty of nine colleges and universities which they visited. Among their observations and findings are the following which are pertinent to our discussion at this conference:

To put our work in perspective we are reminded:

"As early as 1965, the textbook committee of a state legislature holding hearings on high school biology texts was confronted by an impressive group of literate citizens who bitterly opposed the teaching of evolution in the public schools. When we consider furthermore, that in our own research case history - one of the respondents, a college professor, remarked that television is the 'invention of the devil', we might indeed predict that Copernicus would have had a hard time introducing some innovations to our generation as he did in his own time." (Evans)

Evans and Lippman go on to declare, and in my view, quite accurately,

"The greatest resistence to change will be found in those institutions whose traditional primary funtion has been the perpetuation of a society's folkways, mores, and values, such as religious and educational institutions."

Indeed, beyond being no surprise to the student of higher education, there is in this resistence to change a needed sense of dependability which society in general must feel and appreciate and which is referred to by the authors when they state:

"Educational institutions would be derelict in their obligation to society if they were totally responsive to fads and fashions of the surrounding community."

What was learned about faculty response to the use of technology? Evans and Lippman report:

"There is little empirical evidence to support the assumption that faculty and administrators - even though they carry the responsibility of imparting both old and new knowledge and are viewed as experts in evaluating new developments - will choose methodological innovations which seem to provide the greatest potential for learning"

They go on to say:

"It is undoubtedly clear by now that the present study proceeded for the assumption that the attitudes which most our faculty members held toward ITV did not exist in isolation but were often inter-connected in varying degrees with other attitudes, such as those toward teaching machines and teaching methods versus content. They were even inter-connected with the respondent's attitude toward himself and his general philosophy of life."

In the above connection and further from the analysis of attitudes and beliefs of professors it is reported that:

"Forth percent of the professors believed that knowledge of content is a sufficient prerequisite for university teaching, thirty-five percent felt that method is of some importance and only ten percent felt that they were of equal importance." (Evans)

And a very signifigant and humbling clue to any of us who dares believe he or she is destines to be a signifigant agent of instructional change, is the discovery that:

"In effect professors are saying, 'The machine cannot provide those ingredients which I, myself, can provide. I am personal and provide discussion; I motivate students, and I am creative.' Therefore:

"The college professor sees himself in the traditional role of standing before a class, delivering a lecture on which his students take notes - notes he expects them to commit to memory, supplemented by readings in their textbooks and some additional work in the library."

Even the more negative responses in this study (Evans) take on, at times, humorous incongruities, such as:

"ITV is a fine instructional medium and should be encouraged for all to improve instruction, but not for my subject areas," and

"ITV is the best neand for teaching in the long run, but I would leave college teaching if I had to use it."

However, it is interesting to note that there also surfaces in the survey literature, professional types who are pro-ITV and they can be described and I presume identified on our faculties.

The study by Evans pictures them as being "more adventuresome, flexible, and mobile in thinking and teaching.....who see the university as a social as well as academic community.....more free to experiment with new methods and techniques."

And, although such categorical typing may be useful early in the development of a strategy for innovation and implementation, it is important to keep in mind that:

"Although we have given evidence to show that some professors have consistent attitudes toward innovation in general, we think it quite likely that other professors are very selective about the kind of innovation they are willing to accept." (Evans)

The research findings do not altogether present a bleak picture about the current readiness of faculty to climb aboard techological vehicles which may hold promise for the improvement in and the satisfaction faculty seek to gain from teaching. What seems clear is the evidence that approaches to faculty have not been well designed, showed a lack of concern for readiness, and have too frequently not give sufficient attention to the importance of self-motivation toward tangible rewards provided by the "system". For example:

"To utilize ITV many professors seemed to think that much training, equipment and general re-evaluation of teaching goa s and activities would be required ..... evidence seemed to indicate that is a complex innovation can be broken down into palatable bits - at least partial acceptance will be more rapidly affected." And, further:

".....evidence suggests that the degree of acceptance of an innovation by professors may partly depend on whether they viewed the innovation as being instituted by the university administration or .... within their own academic departments as a result of their own planning."

"..... evidence suggests also a reversion effect occurs most often where reinforcers are not programmed beyond certain minimum limits - reinforcers include salary increments, promotions and overt administrative approval" and it is:

"..... highly plausible that an individual's position in the university (rank - job security) bears some relation to receptivity to innovation." (Evans)

A point so often overlooked in the context of effecting change is mentioned by Cogan:

Any plan that seeks to rationalize the process of innovation in our schools will perforce be slowed down by the imperative necessity to train the men and women who will be centrally involved. And that delay will be a blessing if it serves to educate us to understand that the phases of education are long, longer than the phases of a fad, style and local and national politics."

Telling it more stridently, Stern and Keislar in reporting their survey of five thousand references on teacher attitudes conclude:

"The success of any broad-based educational innovation is not simply a result of whether the proper procedures have been technically carried out; rather, if innovation is imposed authoritatively on the teacher, with no attempt to understand and enlist support, it will not succeed."

The above surveryors suggest six categories of guidelines for consideration in the development of a strategy for innovation:

1. Accepting enviornment - largely an administrative responsibility.
2. Assurance of personal involvement.
3. Acceptance of personal responsibility.
4. Role models.
5. Incentives for change.
6. Preparation

A more recent experiment dealing with Faculty Development and the Adoption and Diffusion of Classroom Innovations by Kozma and funded by FIPSE is reported in the Journal of Higher Education.

In a faculty fellowship project at the University of Michigan the findings showed that the incentive of fellowship grants increased signifigantly the fellows use of innovations as compared to a random sample. In this same study, the evidence also indicated that those holding fellowships had relatively little success in influencing fellow faculty members to adopt instructional innovations as a result of discussions.

I suppose any examination of research findings should end on a note of caution and in this instance, a bit more pithy than the typical dissertation conclusion which concludes the need for more study.

Willett, Swanson and Nelson say in Modernizing the Little Red Schoolhouse bring into view a rather fascinating comparison between the feasibility and the logic of change as it applies to the introduction of educational hardware.

"The feasibility of change to man-machine systems of education is clearly seen in the dollar savings ..... the logic for change in another matter ..... the educational establishment represents an intrenched bureaucracy. Thus, any expectation that the soundness of the logic of moving to man-machine systems of education will receive quick acceptance should be viewed with reservations."

Availability of Technology

Until recently those of us concerned with expanding the use of instructional technology in the public sector of higher education had available as evidence of its availability only isolated reports of commitments by campuses across the country.

In the late '70's, AASCU and NASULGC conducted the first national survey of existing technology available to the faculties in over four hundred member colleges and universities. The results of this survey may be known to some of you; however, its highlights should serve an important documentary purpose of this conference.

The survey covered three major areas: availability and description of present communications technology facilities, the instructional use served by this technology, and the plans for expansion. Responses to the national survey indicate that member institutions of both associations exhibit a strong commitment to the use of communications technology in their educational programs. Many institutions in the study operate television and radio broadcasting stations which are used for educational programming. In fact AASCU and NASULGC institutions constitute approximately one-third of the station membership of the Public Broadcasting System.

Seventy-nine percent of the NASULGC institutions in the survey operated non-commercial broadcasting and fifty-four percent of the AASCU members carried non-commercial radio programming. FM frequencies were licensed by seventy-five percent of the NASULGC and fifty-two percent of the AASCU institutions.

Closed circuit television systems were found to be quite common and in addition, the public colleges and universities in the two associations produced educational programs for the broadcasting stations (NASULGC 71.1% and AASCU 33.9%). They utilized cable TV to distribute even more programs. NASULGC cable utilizers totalled fifty-two percent and AASCU responders totalled forty persent in the cable TV category.

The survey covered also the provision for faculty utilization of telecommunication facilities for instructional purposes. In excess of ninety percent of the member institutions stated media services were available to faculty and staff and over eighty percent reported the availability of telecommunications facilities to the adult public. Instructional programs include credit and non-credit course, continuing education units and open learning and external degree programs.

With a view toward expansion, member institutions who operate telecommunications systems in both associations, as well as those who do not, indicated expansion plans especially in the areas of instructional media facilities, radio broadcasting and cable television.

It seems reasonable to conclude from this nationwide survey of public colleges and universities that a surprising array of educational technology is presently available to faculty for their use, and the awareness of the emerging signifigance of this technology as a means of enhansing and extending outward the teaching boundaries of the campus is of concern and importance to these public institutions. With this advantage clearly in view, there is reason to hope that with proper training and inducement, faculty in increasing numbers will rise to form the critical linkage between the communications technology found to be in place with the needs of students in a variety of educational settings.

Some Working Assumptions - (Six, in fact)

I feel some obligation to share with you at this point the aasumptions of a working administrator who has spent some time immersed in the process of learning and thinking about the current state of instructional technology, and who also has endeavored to bring into being a small amount of change.

From this experience, I have drawn assumptions, some of which I hope you will find worthy of consideration and perhaps even helpful.

Assumption Number 1

> There remains abroad in the land a legacy of unfilled promises promulgated by hardware advocates who, during the sixties, in particular, convincingly influenced the purchase of vast amounts of instructional equipment with the promise of relieving the then shortage of faculty and at the same time reducing the cost of instruction.

State budgets analysts and, indeed, many legislators make painful reference to the millions "wasted" in purchasing educational hardware to equip new buildings during the sixties. The space utilization studies which yearly demonstrate our failure to make sufficient use of large lecture halls and inventories of dial access equipment, TV studios and the like are too often silent and also unfortunate testimony against proposed new iniatives at a time when higher education is strapped for funds.

It is my view that any progress we hope to make toward the goal of more effective use of new technology in teaching, even with faculty motivation at a high peak, must be calculated within the existing constraints of continuing inflation, unfriendly budget examiners and public policies which reflect an attitude on the part of decision makers that higher education has had its moment on stage and now must make way for other pressing societal needs.

Our requirements for new equipment, if met at all, will be drawn from a convincing demonstration of yearly savings through more efficient management and the never ending search for dollars which must flow from gifts and grants.

We can, I believe, overcome the unfortunate legacy of our past stewardship of instructional technology. It is not unrealistic to suggest that the necessity of such a struggle is after all our best insurance that progress will be more sustainable because it will have been so hard won.

Assumption Number 2

> Most college faculty have insufficient experience as learners via technology for us to expect them to be advocates of the implementation of available communications technology either as a teaching tool or a more comprehensive teaching methodology.

There is little or no evidence to suggest that graduate students preparing for careers in teaching have been taught other than the lessons of scholarship and research. Whatever teaching methods they adopted came as a result of imitation of their mentors or by trial and error, rather than studied examination of the teaching process. From this direction as a starting point is where we must begin as we introduce also into the current equation faculties which are unionized and who are forced to perceive depressing immobility as a career reality.

An exaggeration, perhaps, but our overly sanguine assumptions in the past - which overlooked the critical necessity to begin where faculty are - resulted frequently in the wrongheaded purchase of "hardware methodology" far ahead of any attention to the needs, expectations, abilities and realities of our faculties.

Faculty development initiatives generated largely by faculty themselves, and primed and sustained by administrators who understand the role of "facilitator" hold the promise of bringing about a gradual, perhaps even an assuredly sustainable involvement of faculty in the use of a vasr array of new and more available educational technology.

Assumption Number 3

> The pervasive and fearful spectre of broad exposure to the risk of failure before the eyes of watchful colleagues is intimidating and a retardant obstacle in the path of the most secure of instructional faculty.

It is the rare faculty member who would speak in other than fearless tones about the educational value of an occasional failure. Usually in this context of failure our reference point is the students whom we instruct. The carryover of this belief into the very different and personal risk context of teaching methodology demonstrates clearly a considerably different and largely hesitant faculty response - at the

very least those of us interested in building a strategy for change should assume so.

The intramurals of peer evaluation for reappointment, promotion and retrenchment mechanisms engaged as a result of shortages of funds and reduction in generated student hours in the latter instance surface resistance factors even from faculty who have traditionally believed themselves to be secure in their positions. The perceived exposure to criticism felt by even the best of professors sometimes easily sets in motion subtle and curiously separtment-wide episodes of resistance rather than acts of courage.

Overcoming the anxieties married to potential failure is most successfully accomplished in a general sense by the recognition of its presence. Steps which follow are largely situation specific and are better locally planned and constructed, except for the all-important necessity of confidence building that comes from early if only modest success and followed by deserved recognition.

Assumption Number 4

> The sanguine declaration that excellence through resource enrichment is hardly creditable during the current and prolonged era of the equivalent of zero-based budgets, faculty retrenchment, and long-term fiscal exigencies.

The sooner we engage to operational assumption that resource enrichment belongs to a bygone era of educational finance, the better will be the operational design of instructional schemes which make use of instructional innovation.

Priorities will of necessity require reordering. Programs and earlier missions may be clled into question and consequently, be replaced by current plans for instructional improvement which require the shifting of resources. Indeed, there may emerge a new "art" of creative management that allows, for a process of substitution rather than addition.

We should not fail to recognize that higher education management requires the similar challenge of rethinking and reassessment of attitudes and methodologies as does the instructional process; indeed, it is not presumptuous to recommend such a process as a beginning expectation of

any plan designed to change substantially instructional modes of operation.

Assumption Number 5

> Promotion, workload considerations, financial and success incentives are high on the list of reward factors which spur faculty responsiveness,

If we dream of a world of change absent of these compelling factors we dream of a time that will never be. They are, indeed, situational and often personal, but they persist as perceived and real expectations. They are for the faculty, the tangible outcomes related to ego fulfillment which out-distance institutional goals and expectations. They can be the silent killers of change or the very real difference between the success and failure of a strategy. At the very least, faculty must perceive an administration involved in and willing to articulate with conviction and to document wuth creditability, positive action that the university reward system is responsive to faculty willing to make substantive commitments to instructional change.

Assumption Number 6

> There is no foreseeable technological substitute for the creative, learner oriented and highly knowledgeable "director" of the learning enterprise - rather, there exists a mounting array of workable instructional tools around which to surround and assist those prepared and motivated to use them.

In earlier times even some thoughtful educationists took the highly questionable leap from the knowledge base directly to the learner via available hardware. Witness, for example, the dismal failure and regression that accompanied the wholesale distribution of the "teaching machine". One is reminded of the earlier experiments in man's fascination with flight, and the do-it-yourself contraptions which were fastened to arms and legs - each in its own way destined to fail because of a lack of knowledgeable application of correct theory and creatively directed into practice .

It is my view that effective utilization and progress in the use of technology will succeed to the extent that the process remains directly in the hands of the teacher with prior knowledge of the subject and compassionately aware of the needs of the learners.

A model of the director of learning set forth by some media professionals places the professor within a center-peice similar to the role of a nightly newscaster. He or she directs the conduct of the enterprise, selects the content, chooses from an array of sources and resources and is responsible for a format design which is appropriate to the viewing audience or learners as the case may be. Portions may be altogether pre-cast. Other segments are flexibly utilized to meet the changing needs and demands of the situation.

The point to keep in mind is the requirement of a learner-oriented knowledgeable manager of the process to have resources of his choosing available on demand, and appropriately matched to the broadly based needs of students. The achievement of a system that responds to these demands is a complex and demanding challenge and cannot be viewed as an economy measure or a workable substitute for skilled professionals. However, the degree to which it may be more expensive over the longer run than present instruction requires much more study and experience.

The Response of Two Associations (AASCU - NASULGC)

The American Association of State Colleges and Universities and the National Association of State Universities and Land-Grant Colleges have given increasing concern to proposals which may result in the establishment of an ongoing system with the potential of dealing effectively with the potential of faculties to expolit instructional enhancement through technology. It is their belief that progress has been retarded and can be attributable to:

(1) the lack of understanding among most faculty of appropriate and pedagogical applications of technology, and

(2) the fear of losing creative control of their classes and course work by using the materials developed by others

The proposal set forth through the combined efforts of the associations has the potential of involving some seventeen member institutions

and over one hundred sixty instructional faculty, academic deans, and instructional support staff. Essential to the success of the proposal is the requirement that institutions as well as faculty commit themselves to a continuing involvement in the project throughout its duration through the allocation of a portion of the support costs of the proposal, the remaining costs to be covered by an outside agency.

Following each orientation conference, faculty will be required to formulate their own ideas for applications of technology to academic subjects which they teach in their own institutions. Delegations from institutions chosen to participate also will be encouraged to work as a "team" during the training institutes.

As an ultimate outcome and beyond the hoped-for advantages to participating faculty will be the dissemination of what has been learned and achieved to other colleges and universities.

In Conclusion

I chose to end on a bright note of hope for reasons which go beyond my own involvement in the advancement of instructional improvement.

I'm afraid I may have left our audience with a sense of despair that I do not feel. Indeed, the fact of our generally low morale, the doom-sayer predictions of the future and our failures in the past can, I believe, be turned to productive use. We have perhaps come of age. We are hard headed, more so than in the past, not so easily led and curiously demanding more accountability of ourselves. It may well come to pass that the 80's will bring forth a faculty response to technology that surpasses our imagination in part because we are poorer yet wiser but due in part also to the understanding and assistance made available to us through reunions made possible by this conference.

BIBLIOGRAPHY

Evans, Richard I. Resistance to Innovation in Higher Education, Jossey-Bass, Inc. 1968.

Journal of Research and Development in Education, Vol. 10 Number 2, Winter 1977. "Teacher Attitudes and Attitudes Change: A Research Review by Stern and Keislar.

Theory Into Practice, Vol. XV, Number 3, June 1976. "Educational Innovation: Educational Workload" by Cogan.

Willett, Swanson and Nelson, Modernizing the Little Red School House, Educational Technology Publications, Englewood Cliffs, N.J. 1979.